

**CLAIMS**

What is claimed is:

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1. A dielectric barrier discharge lamp having

- a discharge vessel, the wall of which encloses a discharge medium,

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- a set of electrodes for generating dielectric barrier discharges in the discharge medium, with a dielectric barrier action in respect of at least some of the set of electrodes,

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- a phosphor mixture, which is applied to part of the wall of the discharge vessel,

- a phosphor mixture comprising the following phosphor components:

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R: (Y,Gd)BO<sub>3</sub>:Eu,

G: LaPO<sub>4</sub>:(Tb) or LaPO<sub>4</sub>:(Ce,Tb),

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B: BaMgAl<sub>10</sub>O<sub>17</sub>:Eu

whereby

30 the following applies to the proportions by weight formed by the phosphor components R, G, B in the mixture:

$0.05 \leq R \leq 0.15$ ,  $0.50 \leq G \leq 0.70$ ,  $0.20 \leq B \leq 0.40$  and  $R+G+B=1$ .

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2. The dielectric barrier discharge lamp as claimed in claim 1, in which the following applies to the proportions by weight in the mixture:

$0.06 \leq R \leq 0.12$ ,  $0.58 \leq G \leq 0.66$ ,  $0.25 \leq B \leq 0.35$  and  $R+G+B=1$ .

3. The dielectric barrier discharge lamp as claimed  
in claim 1, in which the discharge vessel contains  
5 xenon as discharge medium.

4. The dielectric barrier discharge lamp as claimed  
in claim 3, in which the xenon filling pressure is in  
the range between 50 and 200 mbar.

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5. The dielectric barrier discharge lamp as claimed  
in claim 3, in which the xenon filling pressure is in  
the range between 100 and 150 mbar.

15 6. The dielectric barrier discharge lamp as claimed  
in one of the preceding claims, in which the discharge  
vessel is formed to be flat and comprises a back plate  
and a front plate for the light to emerge, which is at  
least partly transparent to light.

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7. The dielectric barrier discharge lamp as claimed  
in one of claims 1 to 5, in which the discharge vessel  
is tubular.

25 8. The dielectric barrier discharge lamp as claimed  
in claim 6, having a dielectric layer between at least  
part of the set of electrodes and the discharge medium.

9. The dielectric barrier discharge lamp as claimed  
30 in claim 8, in which the set of electrodes comprises  
two or more elongate electrodes which are arranged on  
the wall of the discharge vessel.

10. The use of a dielectric barrier discharge lamp  
35 with a color temperature of 10,000 K or above for  
viewing X-rays.

11. The use as claimed in claim 10, wherein the color temperature is more than 20,000 K, preferably more than 30,000 K, particularly preferably more than 40,000 K.

- 5 12. The use as claimed in claim 10, wherein the dielectric barrier discharge lamp has the features described in one of claims 1 to 9.